

Division of Forensic Science
State of Florida

REPORT ON THE EXAMINATION OF PHYSICAL EVIDENCE

Examination Requested: DNA

DR Number	2002-110789	Report Date	4/25/2002
Offense Type	Sexual Assault/Homicide	Page	1 of 3
Department	Police Department		
Lab Report #	02-0150-2	Approved By	A3884, A4093

Case Names Doe, Sandy (Victim)
Smith, Joe (Suspect)

Evidence Receipt Items #6, 7, and 8 were received by Forensic Scientist, Jane Tyler on April 4, 2002 from Property.

INVOICE-ITEM

ITEM DESCRIPTION

6	Known blood sample from Lucy Johnson
7	Known blood sample from Carol Johnson
8	Known blood sample from Joe Smith (Suspect)

**** Analysis of the following items were reported in Lab Report # 02-0150-1 dated, 2/15/2002: Items # 1, 2, 3, 4A, and 4B. Some information contained in this report was also reported in report #02-0150-1.**

RESULTS

Human DNA was isolated from Items #6 and 7. The DNA was characterized using the Polymerase Chain Reaction (PCR) at amelogenin and the Short Tandem Repeat (STR) loci: D3S1358, vWA, FGA, D8S1179, D21S11, D18S51, D5S818, D13S317, D7S820, D16S539, TH01, TPOX and CSF1PO.

Locus\Item	Item#1 Sandy Doe** (Victim)	Item #6 Lucy Johnson	Item #7 Carol Johnson	Item #8 Joe Smith (Suspect)	Item #2 Vaginal Swab (Epithelial fraction)**
Amelogenin	X	X	X	XY	X
D3S1358	14,16	16, 17	14, 17	15,17	14,16
vWA	16,18	15,17	17	14	16,18
FGA	22,23.2	18,28	18,26.2	22,24	22,23.2
D8S1179	13,17	8,10	8,14	11,14	13,17
D21S11	28,30.2	25,32.2	25,31	28,30	28,30.2
D18S51	14,16	17,19	17,21	13,17	14,16
D5S818	11,13	10,11	11	11	11,13
D13S317	11	8,11	8,12	8,11	11
D7S820	9,10	7,13	6,7	9,11	9,10
D16S539	12,13	13,15	13	10,13	12,13
TH01	6,9.3	6,9.3	6,10	6,9.3	6,9.3
TPOX	9,11	8,9	8,12	8	9,11
CSF1PO	12	10,12	10,14	10,11	12

*INC = Inconclusive results

Jane Tyler
Forensic Scientist

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RESULTS, continued

Locus\Item	<i>Item #2 Vaginal Swab (sperm fraction)**</i>	<i>Item #3 Cigarette Butt**</i>	<i>Item#4A Screwdriver Handle**</i>	<i>Item #4B Screwdriver End**</i>
Amelogenin	XY	XY	X	XY
D3S1358	15,17	15,17	14,16	14,15,17
vWA	14	14	16,18	14,17
FGA	22,24	22,24	22,23.2	18,22,24,26.2
D8S1179	11,14	11,14	13,17	8,11,14
D21S11	28,30	28,30	28,30.2	25,28,30,31
D18S51	INC	13,17	14,16	13,17,21
D5S818	11	11	11,13	11
D13S317	8,11	8,11	11	8,11,12
D7S820	9,11	9,11	9,10	6,7,9,11
D16S539	10,13	10,13	12,13	10,13
TH01	6,9.3	6,9.3	6,9.3	6,9.3,10
TPOX	8	8	9,11	8,12
CSF1PO	INC	10,11	12	10,11,14

*INC = Inconclusive results

A 13 locus DNA profile, consistent with a single male donor, was obtained from Item #3 (cigarette butt). This DNA profile matches the DNA profile obtained from Item #8 (known reference standard from Joe Smith-Suspect). The approximate incidence of this DNA profile is 1 in 2.1 quadrillion Caucasians, 1 in 400 quadrillion African Americans and 1 in 11 quadrillion Southeastern Hispanics. Statistical evaluation based on all 13 loci.

(1 quadrillion = 1,000,000,000,000,000 1 quintillion = 1,000,000,000,000,000,000)

A 13 locus DNA profile, consistent with a single female donor, was obtained from the epithelial fraction of Item #2 (vaginal swab). This DNA profile matches the DNA profile obtained from Item #1 (known reference standard from Sandy Doe-Victim). **

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An 11 locus DNA profile, consistent with a single male donor, was obtained from the sperm fraction of Item #2 (vaginal swab). Inconclusive results were obtained at two loci, D18S51 and CSF1PO. This DNA profile matches the DNA profile obtained from Item #8 (known reference standard from Joe Smith-Suspect) at the following loci: D3S1358, vWA, FGA, D8S1179, D21S11, D5S818, D13S317, D7S820, D16S539, TH01, and TPOX. The approximate incidence of this DNA profile is 1 in 12 trillion Caucasians, 1 in 820 trillion African Americans and 1 in 42 trillion Southeastern Hispanics. Statistical evaluation based on the following loci: D3S1358, vWA, FGA, D8S1179, D21S11, D5S818, D13S317, D7S820, D16S539, TH01, and TPOX.
(1 quadrillion = 1,000,000,000,000,000 1 quintillion = 1,000,000,000,000,000,000)

*A 13 locus DNA profile, consistent with a single female donor, was obtained from Item #4A (screwdriver handle). This DNA profile matches the DNA profile obtained from Item #1 (known reference standard from Sandy Doe-Victim). ***

A mixed DNA profile from at least two sources was obtained from Item #4B (screwdriver end). Assuming only two sources:

- *Sandy Doe is excluded as a possible contributor to this mixed DNA profile.***
- This mixed DNA profile is consistent with the combined DNA profiles from Items #7 (known reference standard from Carol Johnson) and Item #8 (known reference standard from Joe Smith-Suspect).

I have therefore considered two possibilities:

- The mixture is a combination of Items #7 (Carol Johnson) and #8 (Joe Smith).
- The mixture is a combination of Item #7 (Carol Johnson) and an unidentified person.

The chance of obtaining the mixed DNA profile is 12.8 million times more likely in the Caucasian population if it is a mixture of Items #7 (Carol Johnson) and #8 (Joe Smith) than if it is a mixture of Item #7 (Carol Johnson) and unidentified person. In the African American population the number is 190 million and in the Southeastern Hispanic population it is 69.2 million. Statistical evaluation based on all 13 loci.

EVIDENCE DISPOSITION

At the conclusion of analysis, Items #6, #7, and #8 were retained in the laboratory section.

Jane Tyler
Forensic Scientist